ATTACHMENT FOR SOLOCITATION/SYNOPSIS
W9124Q-FIBEROPTICCABLE

Statement of Work/Specifications:

SECTION 1.0 - SCOPE

This Purchase Description (PD) specification establishes the requirements for Single Mode Fiber Optic Cable, White Sands Missile Range, New Mexico.

SECTION 2.0 - APPLICABLE DOCUMENTATION

REA specification for totally filled Fiber Optic Cable PE-90, Aug 1994. Telephone Operations and Standards Division, Rural Electrification Administration, U.S. Department of Agriculture, Washington, D.C. 20250, telephone (202) 382-8667, also Bellcore GR-20, July 1998, Bellcore customer Service, 60 New England Ave., Piscataway, NJ 08854-4196, telephone (201) 699-5800.

SECTION 3.0 - REQUIREMENTS

The contractor shall deliver Fiber Optic Communication Cable that meets the specifications in REA-PE-90 with added specifications in Paragraph 3.1 through 3.17 to satisfy the essential requirements of the Government set forth in this PD:

3.01 All fibers in the cable must be usable and meet required specifications.

3.02 Each optical fiber shall be sufficiently free of surface imperfections and inclusions to meet the optical, mechanical, and environmental requirements of this specification.

3.03 Core Diameter (Characterized): 8.3 μm

3.04 Cladding Diameter: 125.0 ± 1.0 μm

3.05 Coating Diameter: 245 ± 10 μm

3.06 Colored fiber nominal diameter shall be 250 μm

3.07 Dual Wavelength

3.08 Attenuation: The maximum attenuation shall be 0.5 dB/km at 1310 nm and 0.4 dB/km at 1550.

3.09 Mode Field Diameter: 9.30 ± 0.50 microns at 1310, 10.50 ± 1.00 microns at 1550

3.10 The attenuation due to 100 turns of fiber around a 75 ± 2mm diameter mandrel shall not exceed 0.05 db at 1310 nm and 0.10 dB at 1550 nm.

3.11 Zero dispersion Wavelength (λo):1301.5 nm $\leq \lambda o \leq$ 1321.5 nm

3.12 Operating and storage temperature at -40 degrees to +70 degrees Celsius.

3.13 Each fiber shall be distinguishable by means of color coding in accordance with Industry Standard TIA/EIA 598 Bellcore TR-NWT-000020 Issue 5, Dec 92 (Optical Fiber Cable Color Coding)

3.14 The central anti-buckling member shall consist of a dielectric, glass reinforced plastic (GRP) rod. The purpose of the central member is to prevent buckling of the cable. The GRP rod shall be overcoated with a black colored thermoplastic when required to achieve dimensional sizing to accommodate buffer tuber/fillers.

3.15 Fillers may be included in the core to lend symmetry to the cable cross-section where needed.

3.16 Fillers shall be placed so that they do not interrupt the consecutive positioning of the buffer tubes.

3.17 Optical fibers shall be placed inside a loose buffer tube. The nominal outer diameter of the buffer tube shall be 3.0mm..

3.18 Twelve fibers per tube or bundle maximum (mini-bundle) on counts above 36 fibers, on low count cables of 36 fibers and below, 4 to 6 fibers per buffer tube, with the odd count fibers being placed in the last buffer tube.

3.19 Dielectric yarns helically stranded evenly around the cable core shall provide tensile strength.

3.20 Armored cables shall have an inner sheath of MDPE (medium density polyethylene). The minimum nominal jacket thickness of the inner sheath shall be 1.0mm. The armor shall be a corrugated steel tape, plastic-coated on both sides for corrosion resistance and shall be applied around the outside of either jelly moisture retardant or water blocking tape. The outer jacket shall be MDPE applied over the corrugated steel tape armor with a minimum thickness of 1.4mm. The outer jacket shall be marked in white, with the manufacturer's name, sequential metermarkings, month and year of manufacture, and a telecommunications handset symbol as required by Section 350G of the Electrical Safety Code (NESC). The maximum pulling tension shall be 270 N (608lbf) during installation (short term) and 890 N (200lbf) long term installed.

SECTION 4.0 - QUALITY ASSURANCE PROVISION

4.01 All cabled optical fibers > 1000 meters in length shall be 100% attenuation tested. The attenuation of each fiber shall be provided with each cable reel.

4.02 The cable manufacturer shall be ISO 9001 registered and compliant.

SECTION 5.0 - PACKAGING

5.01 The completed cable shall be packaged for shipment on non-returnable wooden reels. Required cable lengths shall be stated in the delivery order. Reel lengths shall not be less than 500 meters nor greater than 6000 meters ± 10%.

5.02 Top and bottom ends of the cable shall be available for testing.

5.03 Both ends shall be sealed to prevent ingress of moisture.

5.04 Each reel shall have a weather resistant reel tag attached identifying the reel and cable.

5.05 The reel tag shall include the following information:

a. Cable number
b. Cable length in meters
c. Product number
d. Date cable tested
e. Cable length markings, inside and outside ends of cable
f. Gross weight
g. Order number
h. Item number

5.06 The reel (one flange) marking shall include:

a. Manufacturer
b. Country of origin
c. An arrow indicating proper direction of roll when handling

"DO NOT SHIP REEL ON SIDE" or "DO NOT LAY REEL ON ITS SIDE"

5.07 Each cable shall be accompanied by a cable data sheet with the following information: cable number, order number, attenuation of each fiber, ordered length, bandwidth specification, actual shipped length.

The following quantities and and type of cable are required:

450,000 meters-006 fiber singlemode cable loose tube cable, dielectric central member/armor, mini bundle, cable length meters, tensile rating 2700N, 1310/1550, attenuation .4/.3
600,000 meters 012 fiber singlemode cable loose tube cable, dielectric central member/armor, mini bundle, cable length meters, tensile rating 2700N, 1310/1550, attenuation .4/.3

300,000 meters 024 fiber singlemode cable loose tube cable, dielectric central member/armor, mini bundle, cable length meters, tensile rating 2700N, 1310/1550, attenuation .4/.3
240,000 meters 036 fiber singlemode cable loose tube cable, dielectric central member/armor, mini bundle, cable length meters, tensile rating 2700N, 1310/1550, attenuation .4/.3
240,000 meters 048 fiber singlemode cable loose tube cable, dielectric central member/armor, mini bundle, cable length meters, tensile rating 2700N, 1310/1550, attenuation .4/.3
120,000 meters 072 fiber singlemode cable loose tube cable, dielectric central member/armor, mini bundle, cable length meters, tensile rating 2700N, 1310/1550, attenuation .4/.3
60000 meters 096 fiber singlemode cable loose tube cable, dielectric central member/armor, mini bundle, cable length meters, tensile rating 2700N, 1310/1550, attenuation .4/.3
60000 meters 144 fiber singlemode cable loose tube cable, dielectric central member/armor, mini bundle, cable length meters, tensile rating 2700N, 1310/1550, attenuation .4/.3